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ABSTRACT OF THE DISCLOSURE

A method of manufacturing tyres by disposing an uncured elastomeric material on a substantially rigid toroidal support so as to form a green tyre. The green tyre and the toroidal support are then disposed within a vulcanization mold in which a molding cavity is defined, so as to mold and cure the green tyre. The molding cavity includes at least a portion in which molding and curing are carried out at a constant volume. The disposition of the elastomeric material onto the rigid toroidal support is carried out by controlling the volume distribution of the elastomeric material onto the toroidal support, so as to fit a predetermined curve of excess material volume, i.e., a curve showing a difference between the volume distribution of the material forming the green tyre and the available volume in the portion of the molding cavity adapted for molding and curing the green tyre at constant volume, versus a predetermined, e.g. radial, direction.